

REMARKS

This Amendment is responsive to the Final Office Action dated February 4, 2010. Claims 4, 6, 8 and 41 are amended. No claims are added or cancelled. Claims 20-39 remain withdrawn. Claims 1-19 and 40-41 are pending.

Claim Rejection Under 35 U.S.C. § 103

Claims 1-19 and 40-41:

In the Final Office Action, claims 1-19, 40 and 41 were rejected under 35 U.S.C. 103(a) as being unpatentable over Hiramoto (US 5,661,329) in view of Hutter (US 4,819,052). Applicant respectfully traverses the rejection. The applied references fail to disclose or suggest each and every feature of the invention defined by Applicant's claims, and provide no teaching that would have suggested an apparent reason to include such features.

For example, the applied references lack any teaching that would have suggested an integrated circuit that comprises "a semiconductor substrate, a buried insulation layer directly over the semiconductor substrate, a first semiconductor mesa over the buried insulation layer, a first guard ring substantially surrounding the first semiconductor mesa, wherein the first guard ring extends through the buried insulation layer contacting the semiconductor substrate, and wherein the first guard ring is arranged to provide RF isolation for the first semiconductor mesa, a second guard ring substantially surrounding the second semiconductor mesa, wherein the second guard ring extends through the buried insulation layer contacting the semiconductor substrate, and wherein the second guard ring is arranged to provide RF isolation for the second semiconductor mesa, and a third guard ring between the first and second guard rings, wherein the third guard ring is in contact with the semiconductor substrate, and wherein the third guard ring is arranged to provide further RF isolation for the first and second semiconductor mesas," as required by Applicant's independent claim 1.

In regard to claim 1, the Office Action appeared to assert that all elements of Applicant's claim 1 are disclosed by the Hiramoto reference (the Office Action appears to rely upon Hutter only to disclose first and second guard rings that are tungsten guard rings as required by Applicant's dependent claim 19). Applicant respectfully notes that the Office Action has failed to establish a prima facie case of obviousness with respect to Applicant's claim 1, because the

Office Action has not provided support for each and every element of Applicant's claim 1, in Hiramoto, Hutter, or elsewhere. Applicant further respectfully submits that the combination of Hiramoto and Hutter does not disclose each and every element of Applicant's claim 1.

Claim 1 requires "a first guard ring substantially surrounding the first semiconductor mesa, wherein the first guard ring extends through the buried insulation layer contacting the semiconductor substrate." Claim 1 further requires "a second guard ring substantially surrounding the second semiconductor mesa, wherein the second guard ring extends through the buried insulation layer contacting the semiconductor substrate." It is well established that the Examiner bears the burden of establishing a *prima facie* case of obviousness.¹ In doing so, the Examiner must determine whether the prior art provides a "teaching or suggestion to one of ordinary skill in the art to make the changes that would produce" the claimed invention.² A *prima facie* case of obviousness is established only when this burden is met.

Applicant respectfully submits that the Office Action failed to establish a *prima facie* case of obviousness, because the Office Action did not provide any teaching that would have suggested incorporation of first and second guard rings that "extend through [a] buried insulation layer contacting [a] semiconductor substrate," as set forth in claim 1. Indeed, the Office Action did not even address these requirements of claim 1. In particular, the Office Action did not cite a reference that discloses or suggests a system having such a feature, much less evidentiary support of motivation to combine this feature into the systems of the applied references. At a bare minimum, Applicant must be afforded an opportunity to rebut any evidence, if such evidence exists. The current evidentiary record, however, does not even provide Applicant with that opportunity.

Furthermore, Hiramoto does not disclose first and second guard rings as required by claim 1. Instead, Hiramoto discloses a semiconductor integrated circuit device where the active regions and an element separating region of a silicon layer are insulated from each other by the separating grooves "extending from the main surface of the silicon layer to an underlying insulating layer." Hiramoto Abstract. For embodiment 2, Hiramoto discusses the formation of separating grooves 7, and 8 in a silicon on insulator (SOI) semiconductor device. Hiramoto at column 7, line 1- column 8 line 24; see also FIG. 10 and 11(a)-11(d). Hiramoto explicitly

¹ *In re Oetiker*, 24 USPQ2d 1443, 1445 (Fed. Cir. 1992).

² *In re Chu*, 36 USPQ2d 1089, 1094 (Fed. Cir. 1995).

discloses that grooves 7 and 8 are formed "...so that a complete dielectric isolation may be effected by the grooves 7 and 8 which are as deep as to reach the insulating film 15 though the epitaxial layer 3 and the buried layer 2." Hiramoto at column 7, lines 19-29. Thus, Hiramoto discloses grooves that are merely deep enough to reach, not extend through, an underlying insulating layer as required by claim 1. Applicant further notes that the Hutter reference also lacks any description of a guard ring that extends through the buried insulation layer contacting the semiconductor substrate as required by claim 1. Therefore, the Office Action has not provided any reference in support of each and every element of Applicant's claim 1.

For at least those reasons set forth above, the Office Action has failed to establish a prima facie case for non-patentability of Applicant's claims 1 under 35 U.S.C. 103(a). Therefore, claim 1 is in condition for allowance. Dependent claims 2-19 and 40-41 each incorporate all elements of claim 1, and are therefore also in condition for allowance. Applicant respectfully requests the withdrawal of the rejection of Applicant's claims 1-19 and 40-41.

Claims 1-19 and 40-41:

Applicant respectfully submits that the Office Action failed to establish a prima facie case of obviousness with respect to Applicant's claim 41, because the Office Action did not provide any support, or even address, the subject matter of claim 41 as previously presented. Claim 41 has been amended herein for clarification purposes to require that that the first semiconductor mesa of claim 1 "is one of a first group of semiconductor mesas, wherein the first guard ring is a first group of guard rings that individually surrounds each semiconductor mesa in the group of semiconductor mesas, and wherein the third guard ring surrounds the first group of guard rings." Hiramoto and Hutter are silent on any such claim features. As such, a prima facie case with respect claim 41 has not been provided by the Office Action, with respect to claim 41 as previously presented, or as amended herein.

For at least those reasons set forth above, the Office Action has failed to establish a prima facie case for non-patentability of Applicant's claim 41 under 35 U.S.C. 103(a). Therefore, claim 41 is in condition for allowance. Applicant respectfully requests the withdrawal of the rejection of Applicant's claim 41.

CONCLUSION

All claims in this application are in condition for allowance. Applicant respectfully requests reconsideration and prompt allowance of all pending claims. Please charge any additional fees or credit any overpayment to deposit account number 50-1778. The Examiner is invited to telephone the below-signed attorney to discuss this application.

Date:

March 24, 2010

SHUMAKER & SIEFFERT, P.A.

1625 Radio Drive, Suite 300

Woodbury, Minnesota 55125

Telephone: 651.286.8380

Facsimile: 651.735.1102

By: 

Name: Robert E. Ray

Reg. No.: 63,953